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10/506,505	09/03/2004	Yoshihiro Hori	70456-056	2825
7590 10/11/2007				
Gene Z Robinson McDermott Will & Emery 600 13th Street N W Washington, DC 20005-3096				
			EXAMINER	
			LAFORGIA, CHRISTIAN A	
			ART UNIT	PAPER NUMBER
			2131	
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			10/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/506,505

Applicant(s)

HORI ET AL.

Examiner

Christian La Forgia

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-14 and 16 is/are rejected.
- 7) ☒ Claim(s) 10 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/6/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Applicant's amendment of 17 July 2007 has been noted and made of record.
2. Claims 1-16 have been presented for examination.

Response to Arguments

3. Applicant's arguments, see page 11, filed 17 July 2007, with respect to the drawings have been fully considered and are persuasive. The objection of Figure 1 has been withdrawn.
4. Applicant's amendments, see page 11, filed 17 July 2007, with respect to the specification have been fully considered and are persuasive. The objection of the specification has been withdrawn.
5. Applicant's arguments, see pages 12-13, filed 17 July 2007, with respect to the rejection of the claims have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new grounds of rejection is made below.
6. The Examiner acknowledges the Applicant's request for abeyance with regards to the double patenting rejections of claims 1-16. The rejections appear below for the sake of clarity and brevity.

Information Disclosure Statement

7. The information disclosure statement (IDS) submitted on 06 April 2007 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statement.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-4, 11, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,477,530 B1 to Omata et al., hereinafter Omata.

10. As per claim 1, Omata teaches a data storage device performing input/output of classified data in accordance with predetermined input/output procedures for protection of said classified data, and storing said classified data, comprising:

an interface portion externally exchanging data (Figures 1 [block 14, 37], column 1, line 65, column 2, lines 1-2, i.e. data input/output units);

a first storage portion (Figures 1 [blocks 12, 13]) storing said classified data (Figures 9, 11, 13, column 6, lines 47-64, column 12, lines 47-55, i.e. original documents with copying prevention, data that has been digital signed); and

a second storage portion storing log information (Figures 1 [block 4], 12 [block 4]) related to the input/output of said classified data according to said predetermined input/output procedures (column 3, lines 47-53, column 14, lines 20-25, column 14, lines 39-53, i.e. an access type denoting the type of operation made by the user) and an address representing a storage position of said classified data to be input/output in said first storage portion (column 3, lines 47-53, column 14, lines 20-25, column 14, lines 39-53, i.e. a retention device identifier to specify the retention device used).

11. Regarding claim 2, Omata teaches a control portion (Figure 1 [block 8]) controlling the input/output of said classified data (Figure 1 [block 7]), wherein said log information includes:

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an identification code identifying said classified data to be input/output (column 14, line 62-65, i.e. file name or file type), and

a first status information representing a state of storage of said classified data to be input/output in said first storage portion (Figure 13 [block 13], column 14, line 60 to column 15, line 7); and

said control portion operates in accordance with said predetermined input/output procedures to receive said identification code and said address of said classified data to be input/output via said interface portion, and to store said identification code and said address in said second storage portion, and operates in response to a request externally applied via said interface portion to determine the state of storage of said classified data in said first storage portion based on said identification code and said address stored in said second storage portion, and to renew said first status information based on said state of storage (column 15, line 13, to column 16, line 25).

12. With regards to claim 3, Omata teaches wherein said log information further includes a second status information recording a status of progression of said predetermined input/output procedures relating to the input/output of said classified data to be input/output, and said control portion renews said second status information in accordance with the progression of said predetermined input/output procedures (column 3, lines 47-53, column 14, lines 20-25, column 14, lines 39-53, i.e. access time denoting the operation time).

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13. With regards to claim 4, Omata teaches wherein said log information further includes procedure specifying information specifying said predetermined input/output procedures (column 3, lines 47-53, column 14, lines 20-25, column 14, lines 39-53), and

said control portion renews said procedure specifying information in response to every new obtaining of said procedure specifying information (Figure 13, column 14, line 59 to column 15, line 13, column 17, line 18 to column 18, line 21, i.e. updating file attribute data).

14. With regards to claim 11, Omata teaches wherein said classified data includes said identification code peculiar to said classified data (column 3, lines 47-53, column 14, lines 20-25, column 14, lines 39-53), and

said control portion determines the storage state of said classified data in said first storage portion by specifying said classified data in accordance with said identification code included in said classified data stored in the storage position on said first storage portion specified by said address (Figure 13, column 14, line 59 to column 15, line 13).

15. Regarding claim 16, Omata teaches wherein said classified data is a decryption key for decrypting and using encrypted content data (column 15, lines 36-47, i.e. decrypting data), and said data storage device further comprises a third storage portion storing (Figure 14 [block 13]) said encrypted content data (Figure 14 [block 40], column 15, lines 29-39).

Claim Rejections - 35 USC § 103

16. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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17. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omata in view of U.S. Patent Application Publication No. 2002/0191764 A1 to Hori et al., hereinafter Hori.

18. Concerning claim 5, Omata teaches, wherein in an input procedure included in said predetermined input/output procedures for receiving and storing said classified data (column 16, line 55 to column 18, line 21), and

said control portion receives said address via said interface portion, stores said received address in said second storage portion, and stores said classified data received by said cipher communication portion in a storage position on said first storage portion specified by said received address (column 16, line 55 to column 18, line 21).

19. Omata does not teach a cipher communication portion operating in accordance with said predetermined input/output procedures to establish a cipher communication path to a supplier or a receiver of said classified data via said interface portion, and to receive or transmit said classified data via said established cipher communication path and said cipher communication portion receives said classified data in accordance with said input procedure.

20. Hori teaches a cipher communication portion operating in accordance with said predetermined input/output procedures to establish a cipher communication path to a supplier or a receiver of said classified data via said interface portion, and to receive or transmit said classified data via said established cipher communication path (paragraphs 0012, 0067, 0068) and said cipher communication portion receives said classified data in accordance with said input procedure (paragraph 0012).

21. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a cipher communication portion operating in accordance with said

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predetermined input/output procedures to establish a cipher communication path to a supplier or a receiver of said classified data via said interface portion, and to receive or transmit said classified data via said established cipher communication path and said cipher communication portion receives said classified data in accordance with said input procedure, since Hori states at paragraph 0068 that including cipher communication units would only serve to further enhance security.

22. Concerning claim 6, Hori discloses wherein in said input procedure, said cipher communication portion produces a first session key (paragraphs 0067, 0068).

23. Omata discusses the control portion renews said procedure specifying information (Figure 13, column 14, line 59 to column 15, line 13, column 17, line 18 to column 18, line 21).

24. Concerning claim 7, Omata discloses a signing portion producing a signed log information prepared by affixing an electronic signature to said log information or a part of said log information (Figures 9, 11, 13 [block 25], 19 [step S67], column 13, lines 37-40);

said control portion renews said first status information included in said log information stored in said second storage portion, obtains said log information from said second storage portion and applies said log information to said signing portion (Figure 13, column 14, line 59 to column 15, line 13, column 17, line 18 to column 18, line 21),

said log information including said renewed first status information to produce said signed log information (Figure 13, column 14, line 59 to column 15, line 13, column 17, line 18 to column 18, line 21).

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25. Hori teaches the cipher communication portion (paragraphs 0012, 0067, 0068).

26. Omata and Hori do not teach in a re-input procedure included in said predetermined input/output procedures for resuming said input procedure when said input procedure is interrupted.

27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in a re-input procedure included in said predetermined input/output procedures for resuming said input procedure when said input procedure is interrupted, since one of ordinary skill in the art could have realized that merely resuming an input procedure requires routine skill in the art and would yield a predictable result, namely completing the input procedure.

28. Concerning claim 8, Omata teaches wherein in an output procedure included in said predetermined input/output procedures for externally outputting said classified data stored in said first storage portion (column 18, line 23 to column 19, line 4),

said control portion receives said address via said interface portion, stores said received address in said second storage portion, obtains said classified data from the storage position on said first storage portion specified by said received address, and applies said classified data to said output portion (column 15, line 13 to column 16, line 25).

29. Hori teaches the cipher communication portion transmits said classified data received from said control portion in accordance with said output procedure (paragraphs 0012, 0067, 0068, i.e. encrypted communications).

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30. Concerning claim 9, Hori teaches wherein in said output procedure, said cipher communication portion receives an externally produced second session key (paragraphs 0012, 0067, 0068).

31. Omata teaches the control portion renews said procedure specifying information (Figure 13, column 14, line 59 to column 15, line 13, column 17, line 18 to column 18, line 21).

32. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omata.

33. Concerning claim 12, Omata teaches wherein in an input procedure included in said predetermined input/output procedures for receiving said classified data via said interface portion and storing said classified data in said first storage portion (column 16, line 55 to column 18, line 21).

34. Omata does not teach said control portion interrupts said input procedure without storing said classified data in said first storage portion when mismatch occurs between the identification code included in said received classified data and the identification code included in said log information.

35. It would have been obvious to one of ordinary skill in the art at the time the invention was made for the control portion to interrupt said input procedure without storing said classified data in said first storage portion when mismatch occurs between the identification code included in said received classified data and the identification code included in said log information, since one of ordinary skill would recognize that it would only require routine skill in the art to interrupt the input procedure to yield the predictable result of protecting the data and ensure that

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the data being inputted was not a virus or corrupted. See *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d, 1385 (U.S. 2007).

36. Concerning claim 13, Omata teaches wherein in an output procedure included in said predetermined input/output procedures for outputting said classified data stored in said first storage portion via said interface portion (column 18, line 23 to column 19, line 4).

37. Omata does not teach the control portion interrupts said output procedure without outputting said classified data when the identification code included in said classified data stored in the storage position on said first storage portion specified by said address does not match with the identification code included in said log information.

38. It would have been obvious to one of ordinary skill in the art at the time the invention was made for the control portion to interrupt said output procedure without outputting said classified data when the identification code included in said classified data stored in the storage position on said first storage portion specified by said address does not match with the identification code included in said log information, since one of ordinary skill would recognize that it would only require routine skill in the art to interrupt the output procedure to yield the predictable result of ensuring that the data being outputted was not transmitted to a user who was not authorized to access said data. See *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d, 1385 (U.S. 2007).

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39. With regards to claim 14, Omata teaches a signing portion producing signed data for said log information, and producing signed log information by affixing said produced signed data to said log information (Figures 9, 11, 13 [block 25], 19 [step S67], column 13, lines 37-40);

said control portion outputs said signed log information via said interface portion (Figure 1 [block 37], column 18, line 23 to column 19, line 4).

40. Omata does not teach a re-input procedure performed for resuming an input procedure for receiving said classified data via said interface portion and storing said classified data in said first storage portion, when said input procedure is interrupted.

41. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a re-input procedure for resuming an input procedure for receiving said classified data via said interface portion and storing said classified data in said first storage portion, when said input procedure is interrupted, since one of ordinary skill would recognize that it would only require routine skill in the art to restart the interrupted input procedure to yield the predictable result of protecting the data and ensure that the data being inputted was not a virus or corrupted. See *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d, 1385 (U.S. 2007).

Double Patenting

42. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined

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application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re T***ngton*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

43. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

44. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

45. Claims 1-16 are provisionally rejected on the ground of nonstatutory double patenting over claims 1-9 of copending Application No. 10/522,176. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

46. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows (related subject matter shown as **bold**):

Claims 1 and 2 of instant application	Claim 1 of Application No. 10/522,176
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<p>1. A data storage device performing input/output of classified data in accordance with predetermined input/output procedures for protection of said classified data, and storing said classified data, comprising:</p> <ul style="list-style-type: none"> an interface portion externally exchanging data; a first storage portion storing said classified data; and a second storage portion storing log information related to the input/output of said classified data according to said predetermined input/output procedures and an address representing a storage position of said classified data to be input/output in said first storage portion, <p>(2.) a control portion controlling the input/output of said classified data, wherein said log information includes:</p> <ul style="list-style-type: none"> an identification code identifying said classified data to be input/output, and a first status information representing a state of storage of said classified data to be input/output in said first storage portion; and <p>said control portion operates in accordance with said predetermined input/output procedures to receive said identification code and said address of said classified data to be input/output via said interface portion, and to store said identification code and said address in said second storage portion, and operates in response to a request externally applied via said interface portion to determine the state of storage of said classified data in said first storage portion based on said identification code and said address stored in said second storage portion, and to renew said first status information based on said state of storage.</p>	<p>1. A data storage device for performing input/output of classified data in accordance with a constant procedure, storing said classified data, and operating to store history information or update at appropriate timing said history information in accordance with said constant procedure, comprising:</p> <ul style="list-style-type: none"> an interface performing external input/output of data; a data storage portion storing said plurality of classified data; a log storage portion storing a plurality of items of the history information relating to the input/output of said classified data; and a control portion controlling the input/output of said classified data, wherein <p>said log storage portion is provided as a ring buffer circulatively utilizing two or more regions each storing one item of said history information,</p> <p>each of the plurality of items of said history information stored in said log storage portion includes identification information identifying the classified data storing the history information and being to be input/output, and</p> <p>said control portion receives the identification information identifying the classified data to be input/output in accordance with start of input/output processing of said classified data, searches a plurality of regions in said log storage portion in a predetermined order, determines the region storing the earliest item of the history information stored in said log storage portion as the earliest region, and newly stores the history information relating to the input/output processing of said classified data including said received identification information in the determined earliest region.</p>
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47. Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

48. Claims 1-16 are provisionally rejected on the ground of nonstatutory double patenting over claims 1-15 of copending Application No. 10/340,832. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

49. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows (related subject matter shown as **bold**):

Claims 1 and 2 of instant application	Claim 1 of Application No. 10/340,832
<p>1. A data storage device performing input/output of classified data in accordance with predetermined input/output procedures for protection of said classified data, and storing said classified data, comprising:</p> <p style="padding-left: 40px;">an interface portion externally exchanging data;</p> <p style="padding-left: 40px;">a first storage portion storing said classified data; and</p> <p style="padding-left: 40px;">a second storage portion storing log information related to the input/output of said classified data according to said predetermined input/output procedures and an address representing a storage position of said classified data to be input/output in said first storage portion,</p> <p>(2.) a control portion controlling the input/output of said classified data, wherein said log information includes:</p>	<p>1. A storage apparatus to input/output classified data according to a predetermined procedure, and storing said classified data, comprising:</p> <p style="padding-left: 40px;">an interface for data input/output with an external source,</p> <p style="padding-left: 40px;">a data storage unit storing said classified data,</p> <p style="padding-left: 40px;">a plurality of log storage units storing history information associated with input/output of said classified data, and</p> <p style="padding-left: 40px;">a control unit controlling input/output of said classified data,</p> <p style="padding-left: 40px;">each of the plurality of history information stored in said plurality of log storage units including identification information to identify classified data,</p> <p style="padding-left: 40px;">wherein said control unit receives via said interface said identification information identifying classified data that has become a</p>

<p>an identification code identifying said classified data to be input/output, and a first status information representing a state of storage of said classified data to be input/output in said first storage portion; and said control portion operates in accordance with said predetermined input/output procedures to receive said identification code and said address of said classified data to be input/output via said interface portion, and to store said identification code and said address in said second storage portion, and operates in response to a request externally applied via aid interface portion to determine the state of storage of said classified data in said first storage portion based on said identification code and said address stored in said second storage portion, and to renew said first status information based on said state of storage.</p>	<p>subject of input/output in response to commencement of an input/output process of said classified data, selects a log storage unit that stores history information including said received identification information out from said plurality of log storage units when there is such a log storage unit, and stores history information according to a progress of a procedure for said classified data input/output into said selected log storage unit.</p>
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50. Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Allowable Subject Matter

51. The following is a statement of reasons for the indication of allowable subject matter:

Both claims 10 and 15 contain log certifying portions used to certify and verify data. After an extensive search the Examiner has been unable to find any prior art teachings of a log certifying portion in combination with the monitoring of protected data being inputted and outputted from a data storage device as claimed by the Applicant that would anticipate or render obvious the claimed invention. Therefore, claims 10 and 15 are objected to as being dependent

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upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

52. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

53. The following patents are cited to further show the state of the art with respect to data storage devices with private and log storage areas, such as:

United States Patent Application Publication No. 2006/0116969 to Hatanaka et al., which is cited to correct a typo from the previous office action.

United States Patent Application Publication No. 2005/0120232 A1 to Hori et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2005/0076208 A1 to Hori et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2004/0179691 A1 to Hori et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2004/0088510 A1 to Hori, which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2004/0010467 A1 to Hori et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2003/0200458 A1 to Hori et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2003/0161064 A1 to Hori et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2003/0009667 A1 to Horiuchi et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2002/0191764 A1 to Hori et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2002/0184492 A1 to Hori et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2002/0183985 A1 to Hori et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2002/076580 A1 to Horiuchi et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2002/0138442 A1 to Hori et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2002/0136405 A1 to Hori, which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2002/0131594 A1 to Hori et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent Application Publication No. 2002/0034302 A1 to Moriai et al., which is cited to show what appears to be a related application that has yet to be previously disclosed.

United States Patent No. 7,243,242 B2 to Moriai, which is cited to show what appears to be a related patent that has yet to be previously disclosed.

United States Patent No. 7,219,227 B2 to Hori et al., which is cited to show what appears to be a related patent that has yet to be previously disclosed.

United States Patent No. 7,181,629 B1 to Hatanaka et al., which is cited to show what appears to be a related patent that has yet to be previously disclosed.

United States Patent No. 7,134,026 B2 to Horiuchi et al., which is cited to show what appears to be a related patent that has yet to be previously disclosed.

United States Patent No. 7,010,809 B2 to Hori et al., which is cited to show what appears to be a related patent that has yet to be previously disclosed.

United States Patent No. 6,898,708 B2 to Hori et al., which is cited to show what appears to be a related patent that has yet to be previously disclosed.

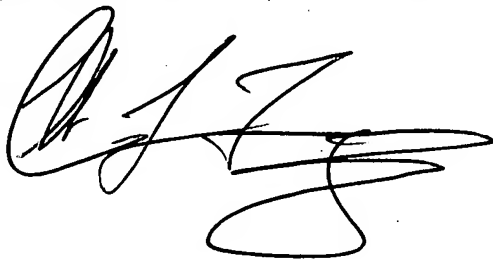
54. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian La Forgia whose telephone number is (571) 272-3792. The examiner can normally be reached on Monday thru Thursday 7-5.

55. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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56. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christian LaForgia
Patent Examiner
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A handwritten signature in black ink, appearing to read 'C. LaForgia', with a large, stylized flourish at the end.

clf